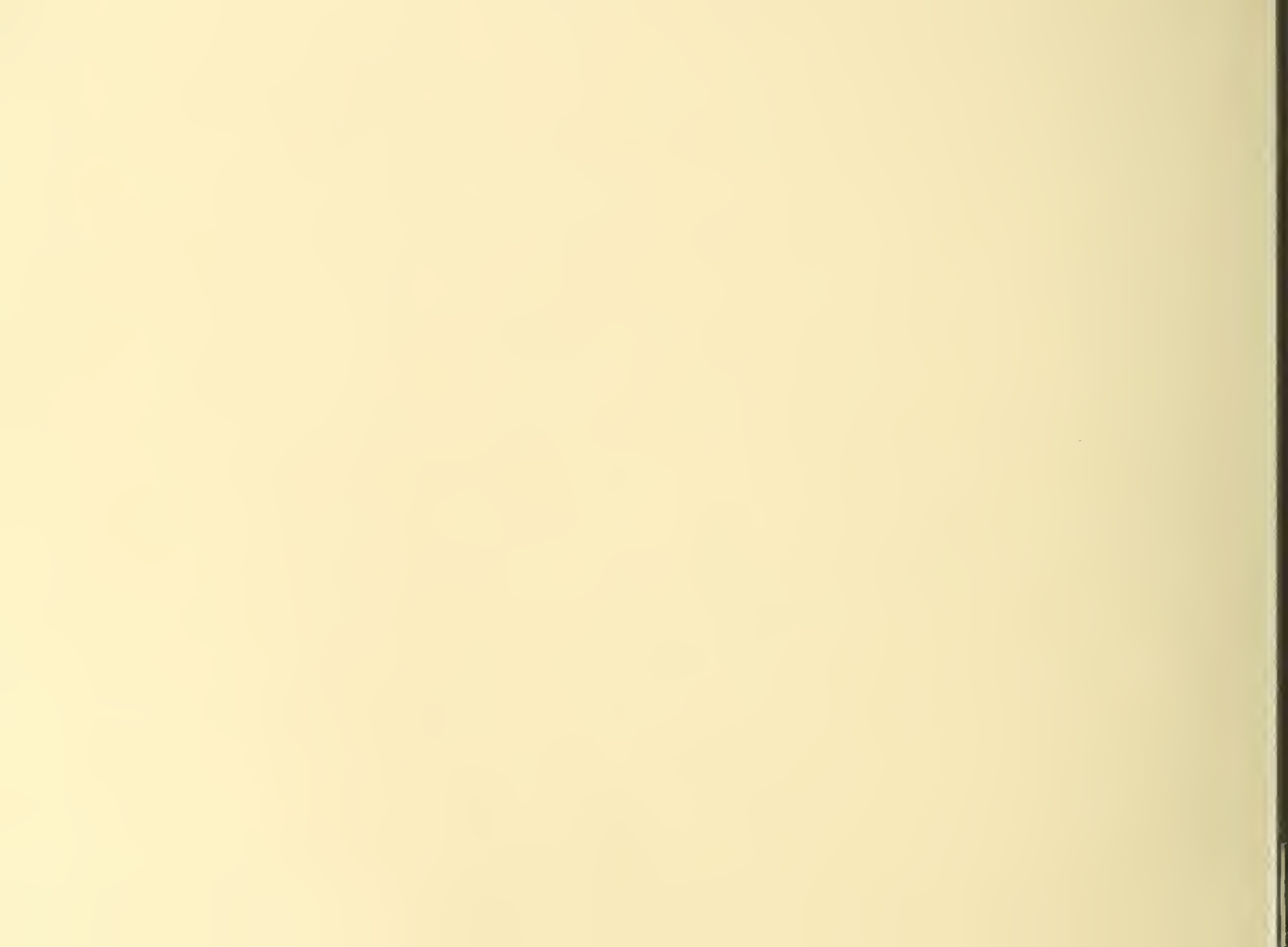


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*Bureau of*  
**HUMAN NUTRITION**  
**AND HOME ECONOMICS**

... what it is ... what it does

**U. S. DEPARTMENT  
OF AGRICULTURE**

# AIDS FARM AND CITY



# FAMILIES ALIKE

Food to eat...clothes to wear...a house to live in...

These are the needs of everyday living.

Providing for these needs is the job of 32,000,000 homemakers, the Nation's largest occupational group.

Taken singly or as a group--these 32,000,000 women have a big job, with big responsibilities. Collectively they spend billions of dollars a year for food, clothing, home furnishings, and other goods and services that families use.

When they buy intelligently, they are helping shape the markets for better farm and other products. When they manage time, energy, and goods efficiently, they are conserving the country's human and material resources.

How well they succeed in all these things largely determines the kind of living families in this country enjoy.

Homemakers must have scientific facts at their command in order to be good buyers and managers. Learning by trial and error is always the hard way, slow and wasteful--but especially so in these days when more and more of the things needed for everyday living are produced outside the home.

To supply help from research focused on the homemaker's problems was the chief reason for establishing the Bureau of Human Nutrition and Home Economics. This Bureau's work summed up briefly is to study principles of efficient household management and ways of making best use of food, fiber, and other products of the country's farms. Its work aids farm and city families alike.



# THREE LONG-TIME OBJECTIVES

In planning the research program, the Bureau of Human Nutrition and Home Economics has three long-time objectives.

## OBJECTIVE I

*To find out more exactly: What are the basic needs for food, housing, clothing, and the other goods and services that figure in everyday living?*

Naturally, men, women, and children of different ages vary in their needs. So do people engaged in different lines of work, living in the ways that people can live in our country of many climates and varied opportunities. But there are certain needs common to all which must be met for satisfying living.





## OBJECTIVE 2

*To find out more about the goods and services that can satisfy human needs.*

Take food for example. More research has been done to find out how foods build and maintain human bodies than to find needed facts about any other of the so-called necessities of life. Yet new fields keep opening up. There is still much to be learned about the requirements of the human body for different nutrients. There is also much to be learned about nutritive values in foods themselves, especially how these values are kept or lost by cooking and preserving, and despite things that happen to foods between farm and consumer's plate. And beyond all, this is the fascinating but little explored field of food combinations. The way we combine foods in our day-by-day eating may have a great deal to do with the way the body can make use of the nutrients it receives.

## OBJECTIVE 3

*To gain a picture of what American families buy and use as part of everyday living.*

How much a family earns and spends, how large it is, what kinds of goods and services the family uses--all are part of the picture. And the picture keeps changing, so that it needs to be retaken every so often by surveys of typical groups of families.

Only by placing this picture of America's consuming habits beside knowledge of its basic needs can we see whether we as a Nation are becoming better fed, better clothed, better housed--and also see how wide is the gap between our practices and our goals.

Records of what families buy and use also serve another purpose. They show the effect of changes in production and consumption in prosperity, depressions, or other situations. They reveal trends which can serve as a guide to manufacturers and merchandisers, as well as to educators and Government agencies.

# WHO DOES THE WORK ?

In the Bureau of Human Nutrition and Home Economics a staff numbering about 275 persons are working on a dozen or so broad research projects, all tying in with the long-time objectives. Most of these staff members are scientific and professional specialists, and their aides. The rest of the Bureau's personnel provides the administrative services and other services needed to keep the wheels of research running smoothly.

As might be expected, many of the scientists are home economists with training that makes them useful in some particular field of research. Home economists plus, you might call them. Many have taken home economics--plus a major or minor in some allied specialty, such as experimental cookery, nutrition, bacteriology, physics, textiles, housing, household equipment, statistics, economics, sociology.

Besides these home economists, the research staff includes both men and women who are highly trained and experienced as chemists, physiologists, physicists, bacteriologists, economists and who now enjoy applying their specialized knowledge to some practical household or consumer problem.

Since the research job is not done until the findings are presented in usable form for various groups, on the Bureau's staff are editors, writers, and others versed in preparing material for use by the public.

Some of the Bureau's staff are fresh out of college, now gaining experience in their first professional jobs. Other members of the staff in top supervisory positions hold one or more graduate degrees and have had years of experience in their chosen fields. It takes people of many types of training and experience to conduct research in a field as broad as home economics.

## A MIND'S EYE VIEW ...

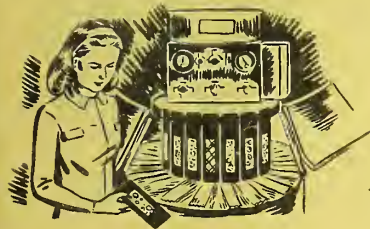
In the rolling country near Beltsville, Md., the Department of Agriculture provides elbowroom for a number of its research bureaus that require laboratories. There in the Agricultural Research Center, you will find the BHNHE's Divisions of Food and Nutrition, Textiles and Clothing, Housing and Household Equipment. Their laboratories are housed in two colonial-style buildings, and a small one-story structure equipped with machinery for a textile workshop.

The Family Economics Division does its analytical work at desks, typewriters, and

calculating machines in the headquarters of the Department of Agriculture in downtown Washington. This division gathers its basic figures by interviewing families in many parts of the country. It also makes use of related figures collected by the Bureau of the Census, the Bureau of Labor Statistics, and other such agencies.

Also at headquarters are the Information Division and administrative offices.

To get a mind's eye view of the divisions at work, let's look into some of the laboratories and workrooms.



# FOODS AND NUTRITION



For our mind's eye tour, let's make our first stop in the laboratories where work is going forward on nutrition and food values.

Here you'll see one group trained in the techniques of vitamin research. They are up on the latest points of measuring vitamins chemically and by feeding tests with those live "test tubes," colonies of rats and guinea pigs or selected strains of micro-organisms. From time to time there is also enlisted the cooperation of men and women willing to live for a while on strict exper-

imental diets. For when all is said and done that is the way of ways to find just how much of certain vitamins we need for health and general well being.

Ask one group in this division what their chief interest is now and they'll tell you--vitamin A. For a number of years this research unit has been concentrating on vitamin A and carotene, the yellow substance found in carrots and other plant tissue. To the public's way of thinking, carrots, carotene, and vitamin A can practically double

one for the other. At least wartime stories of British airmen munching their carrots for vitamin A to prevent night blindness gave that impression. But nutritionally it is not that simple. True, carrots are an exceedingly rich source of carotene and carotene is known to be a "precursor" of vitamin A. But the question is: How much of this carotene from carrots can the body actually absorb and use as vitamin A?

Latest reports from these research workers answer part but no means all the questions. They show that the carotene in carrots as well as other yellow and green vegetables is not all used by either man or the experimental rat. So plans are being laid for more studies with humans as well as with laboratory animals in order to yield more of the urgently needed facts about vitamin A in our daily food.

Next let's look in briefly on the protein chemists. Leader of this group is a man outstanding in this field of finding the

amino acid make-up of proteins in food. You might even find this team of protein chemists in the act of discovering a new amino acid. Already they have one such discovery to their credit. Also on their achievement list is the development of methods that will speed up protein analysis.

Protein is one of the substances in which world food supplies are short. So the faster we can learn about the nature of proteins in all kinds of foods and how to combine them advantageously, the nearer we are to solving one of the problems of a hungry world. Work of this group already shows that it is possible to use two of the less efficient proteins to furnish a combination of higher quality. Just as one example, take peanuts and wheat. Thanks to these protein chemists you can now eat a peanut butter sandwich with new relish and respect. They've found that the amino acids of peanuts supplement those of wheat to make a highly nutritious combination--far better than the protein of





either alone. Peanuts and wheat are among a number of the foods they've studied for protein quality. The list grows longer every year.

While you are touring the food and nutrition laboratories you may also run into people working to answer that \$64 question: How much food value is saved--or lost--when food is cooked and prepared for the table?

For several years food preparation specialists and chemists have joined forces to cook and measure the vitamins and minerals in some 25 foods. They boil, bake, steam, fry. In short they do everything the homemaker does to foods as she prepares them for the family table. They analyze samples of the foods raw as they come from the market. Then they analyze more samples of the same food as prepared for the table. Result: Real facts on how much food value is retained--facts to guide homemakers, institutional cooks, and processors in preparing foods so as to conserve most nutritive value.

The canning laboratories are another busy spot--especially if you should happen along when peaches are ripe or beans are in season. You'd find there bacteriologists and food and equipment specialists preparing to do an assembly line job. They prepare...pack...inoculate some jars with bacteria known to cause spoilage...process...seal...store...and ultimately open up and test. Meantime they keep complete records so they can trace the life history of every jar.

Their final objective is to put a scientific foundation under home canning methods to shorten processing times where possible, always keeping in mind safe, appetizing home-canned foods high in nutritive value. The 3 years of intensive work recently completed do that for low-acid vegetables and meats. Now a similar job is under way on fruits and tomatoes. Also these canning experts are doing a special study on chicken--trying to find whether it is better to pack raw and brown later or to broil or fry be-

fore packing. Whether chicken is canned or fresh cooked it seems we Americans yearn for that rich look and taste that comes only from browning in fat.





Some of the State experiment stations and colleges are cooperating with the Bureau in home canning research. So you might happen to see black-eyed peas canned in Texas being opened up for further study, or plums, peaches, or apples put up by specialists in Massachusetts. By such Federal-State cooperation it is planned to get this job on home canning done faster.

Tantalizing odors often drift out of the experimental kitchens. Follow your nose and you'll come to the place where recipes are developed for home use and for the school lunchroom. Girls and supervisors in spick-and-span uniforms are weighing, measuring, mixing foods for dishes to fit the menu from soup to dessert. They may be experimenting with new foods or perhaps trying out an old familiar food in new ways.

Before a recipe is released the food is given the tongue test by men and women judges chosen from the Bureau's staff. But being on the food jury is no light and easy

matter. Each judge has to prove himself a talented taster. He has to prove he can discriminate flavor, texture, and other fine points that make a food good to eat. Also the judge must show he can be objective in marking up a score card and can rate a food consistently today, tomorrow, and next week or month. Incidentally, this same careful judging is given to the foods in the home canning project and all others where eating quality is important.

These brief glimpses into the laboratories give you an idea of part of the work of the Food and Nutrition Division--but only part. There are studies on the consumer side of many products carried on in cooperation with plant and animal scientists in other Department of Agriculture bureaus.

All in all, Food and Nutrition is largest of the Bureau's divisions, and its history dates back to the days over 50 years ago when the Department of Agriculture began its pioneer investigations in human nutrition.

# HOUSING AND HOUSEHOLD EQUIPMENT

As you visit housing laboratories in this division, you will meet home economists who have specialized in housing, working with architects. Together they are developing plans for more efficient, more comfortable houses for farm families, and preparing a special series of bulletins called "Your farmhouse." The first of these bulletins is packed with information to help a farm family plan for remodeling. In this the specialists are inspired by what many farm families tell them--that they hope to remodel the old house rather than build a new one, and they want help in doing the best possible job.

Research on some of the points most important to a good farmhouse is also moving forward. Several of these housing-minded home



economists, for example, are studying just how much space is needed for the farm kitchen--both to store food and utensils properly and to allow room for doing the various jobs with convenience and comfort. Cabinets and labor-saving equipment that the home carpenter can build are also being designed.

In the home freezing laboratories you will find equipment specialists working side by side with physicists and food technologists. The research here is along two lines, both directed toward the one goal of better home-preserved food to help make the family diet nutritious and appetizing the year around.

One group of studies has to do with the freezers themselves--their ability to freeze food quickly and hold it at the temperatures right for retaining nutritive value and eating quality. To the men and women making these "performance-in-use" tests, it's all in the day's work to insert a thermocouple into a stalk of asparagus packed in a mois-

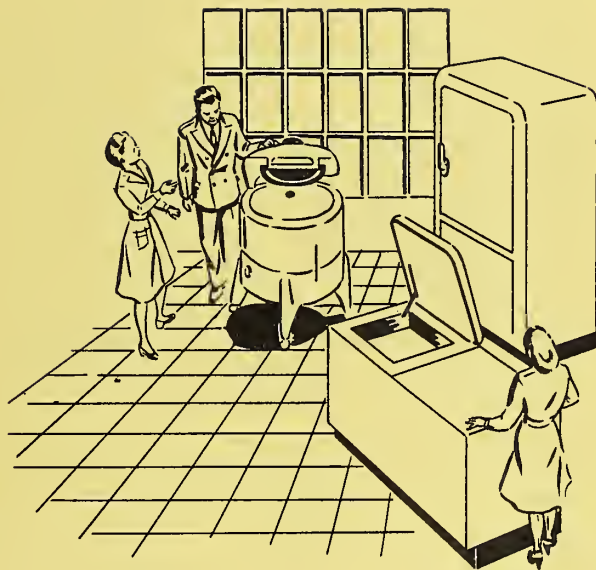
ture-vapor-resistant carton...to read a temperature graph...and to be on familiar terms with a gleaming line-up of electrical testing and measuring instruments. Results of these freezer studies are quickly passed along to manufacturers, and are enabling them to improve their models. These results are also assisting families in their choice of this type of equipment.

Right along with the studies on freezers go others aimed at finding the best methods of preparing and packaging foods for home freezing. This calls for preparing a vegetable or a fruit in every way that the experts consider practicable in order to learn which of them all is best for retaining combined nutritive value and good eating.

For example, the staff froze hundreds of packages of peaches before they could be sure that adding ascorbic acid (vitamin C) to the sirup was the most successful way to prevent darkening of the fruit and to retain peach flavor and nutritive value. They also

compared the quality of frozen peaches when sliced or halved, and when scalded or not scalded before peeling...painstaking work, to save homemakers from uncertainty as to which way to prepare their food for freezing in order to get a top-notch product.

In other studies they compared two different ways that the homemaker might scald peas, broccoli, and asparagus before she packs them for freezing. This brief heating step is highly important. It must halt the action of enzymes which, if left unchecked, would speed the fresh food into "old age"--with loss in flavor, tender texture, and nutritive value. But, asked the freezing experts, which method--steam or boiling water--does more to save good eating quality and vitamin C? After judging vegetables scalded each way, then frozen and stored for different periods, they got an answer, or, rather, several answers: Boiling water is more effective when preparing peas for home freezing; steam for broccoli;





and for asparagus no great difference was found between the two methods.

Freezers are not the only equipment studied. Teams of experts and helpers are also investigating what different types of household refrigerators and laundry and cleaning equipment can do. From what they discover, come recommendations as to kinds, sizes, and designs that meet modern homemaking needs. As each kind of equipment is studied, suggestions on selection and care are prepared for homemakers' use. These studies also furnish facts needed for setting up standards which will guarantee that the equipment will operate satisfactorily in the home.

Results of all this work are put into bulletins, reported in articles for technical journals and popular magazines, and used as the basis for exhibits. In other words, as soon as the researchers are sure of their results, the public gets the facts to use in making farmhouses better and more convenient for families to live in.

## TEXTILES AND CLOTHING



If you should happen to visit the textile laboratories on a sweltering day in summer, you would come away pleasantly cool. For some kinds of scientific textile testing have to be done where the "weather" never changes. So you would find textile specialists in a big air-conditioned laboratory equipped with machines to measure fabrics for strength, stretch, and resistance to abrasion or rubbing. Elsewhere you'd see equipment to do a scientific laundering job and measure how much fabrics shrink. There's also an artificial "sun" to turn on fabrics and find how fast or how fugitive colors are.

Every sample of fabric in these laboratories has a history all its own. Sometimes it may be an experimental fabric, made of a selected cotton, wool, or other fiber, and woven to the Bureau's specifications. The fabric is made up into a standard article for clothing or household use and becomes part of a serviceability study. Volunteers are found willing to use the articles and

cooperate in the study. They must keep accurate records of the number of times the articles are used, laundered, and mended, until as worn-out fabrics they are fit only for the rag bag or until the specialist says it's time to quit. From time to time samples of fabrics undergoing such service tests are drawn out for laboratory analysis. Effects of wear are determined by comparing the chemical and physical properties of the used fabrics with the new.

In this way the textile specialists gather facts and figures to show how much wear can reasonably be expected of certain kinds of fibers when woven into certain kinds of fabrics and used for certain purposes. This kind of information has long been needed. But it is only recently that such case histories on the "service life" of commonly used fabrics have begun to accumulate. Such real facts will take the place of guesswork and enable us to make for more effective use of our raw fibers and our fabrics.

Or maybe the fabrics you happen to see under study are some of those bought in different parts of the country as samples of what is being offered the consumer. A number of State experiment stations, colleges of home economics, and other institutions have joined with the Bureau in such research on fabric quality.

Some days you might find work in the textile laboratories at a standstill. Then the research staff would be busy at their desks studying results of tests and organizing their findings so as to write buying guides to help the homemaker as she goes shopping for household fabrics and clothing. Or to show the manufacturer what the consumer wants and needs, they might be working on specifications. These specifications might be for an upholstery damask...for a cotton broadcloth for men's shirts...for chambray for women's house dresses. The list of fabrics given this careful practical study is gradually growing longer each year.

While we're still on this mind's eye tour, take a few steps down the hall from the textile laboratories. You'll find yourself in rooms where sharp shears cut into new yardage, needles fly, and sewing machines hum. This is the clothing workshop.

Here it is that clothing specialists work out original designs for functional clothes for women and children. Here too you'll find experts studying and simplifying the techniques professionals use, and preparing how-to-do-it aids for the homemaker in making clothes that look smart and have none of that "home-made" air. The detailed directions for altering patterns and fitting dresses worked out here have become handbooks for constant reference by thousands of home sewers all over the country.

This also is the place where during the war the staff worked day after day devising clever ways to mend, remodel, and otherwise keep the old clothes looking young. Many of these wartime helps are anytime dollar



stretchers. Booklets will continue to be available showing how to make over suits, coats, knitwear, fur, felt, leather, into attractive "new" garments and accessories.

Go on farther and you'll meet a group digging in on clothing construction from still another angle. In doing a real pioneer job they are having to work out test methods as they go. They are trying to find out exactly what kind of construction makes for greatest durability in such essential parts of garments as seams, buttonholes, pockets. Eventually their findings will provide a basis for writing better specifications for clothing designed for hard wear. This study also was cooperative with State colleges and experiment stations.

These are but a few of the textile and clothing problems on which research is now in progress. Others have to do with finding ways to prevent mildew and other microscopic growths from damaging fabrics.

A team of textile chemists is launching a

study of home laundering techniques with a view to getting out a home laundering manual. This, it is hoped, will answer homemakers' questions about soaps and other detergents, temperature of wash water and rinse, effect of ironing on different kinds of fabrics, and other points still largely a matter of guesswork. For the field of textile chemistry, as it contributes to household practices, is still comparatively new. Before new facts can be established, many test procedures have to be developed. To explore new avenues to knowledge is one of the constant aims of the Bureau in its work in textiles and clothing as in other fields.



# FAMILY ECONOMICS



What do typical American families eat?... How does their daily diet measure up by nutrition standards?...What kind of clothes do American farm families wear and how much do they spend on clothing for children, teen-agers, and adults?...What kind of housing facilities do farm families have, and want? .What kind of living do farm families enjoy, and how can it be improved?

These and many more such questions it is the job of the Family Economics Division to answer. So when you call at their headquarters you'll find a staff of men and women trained in the economic phases of home economics. They may be poring over big sheets of figures fresh from the computing machines or plotting curves to show trends in American consuming habits. Or they may be get-

ting ready to go out on a field study cooperative with one of the State colleges or experiment stations. Whatever the business of the moment, statistics and what statistics mean are the main job of this division. It also works closely with other parts of the Bureau in applying its findings to practical problems in family living.

Best known example of such a two-way job perhaps is the family food plans at different cost levels. Such plans, now world famous, are the product of food economists who have a thorough working knowledge of the basic nutritional requirements of men, women, and children. They translate these requirements from terms of protein, vitamins, and other nutrients essential to health, into loaves of bread, quarts of milk, pounds of meat, and all the other foods that make up a family's weekly market list. Then drawing on data from dietary surveys of what American families are accustomed to eat plus the latest figures on food prices, they develop

food plans to meet nutrition standards and at the same time fit a range of incomes. Thus any family, whether it has plenty of money to spend for food or must squeeze every dollar, can have for the asking a practical guide to good nutrition.

If you should ask for a plan for a young couple just starting housekeeping, you'd be given "Food for two." This describes the food plan of the Youngs, a typical young couple with moderate income, and includes one of their weekly market lists and menus to match. For the family a little farther along on the age and wage scale there's "Food for the family with young children." Telling how the Wrights did it, this gives the food plan of another typical family and illustrates how they achieved good meals and good nutrition on a modest food budget.

Working hand in glove with the family food planners, you'll find another group specializing in food composition figures. These women trained in nutrition and chemistry are

engaged in one of those jobs that never will be finished as long as scientific research keeps uncovering new facts about the nutritive value of foods.

It is a truly Herculean task that modern science has set for itself in trying to find out what vitamins, minerals, and other substances foods contain that make them nourishing to the human race. It is also a big job to keep abreast of these food analyses in the world's scientific literature, and to compile and keep up to date comprehensive food composition tables. But that is the large assignment being handled by this small group. Each time they release a new set of figures summarizing the findings of thousands of scientists the world over, they have the satisfaction of seeing their new tables quickly become a reference "bible" to nutritionists, doctors, dietitians, and food economists. They have the added satisfaction of knowing they are carrying forward in the tradition of Dr. W. O. Atwater, some-

times called the father of nutrition research in this country. For the tables of proximate composition of American food materials, compiled by Doctor Atwater and his associates and published by the Department of Agriculture in 1896, were the first of their kind in this country.

Through cooperation with home economics institutions and State experiment stations, the Family Economics Division is able to make many of its field studies and gather its statistics from rural families. Typical of such studies was one made in Tennessee during the war years. The purpose was to study effect of change in size of family, income, and place of residence on saving and spending, and on home production of food and other items of family living. Results will be used by the Tennessee Extension Service and others conducting educational programs in the State, and will form part of the growing body of knowledge on how American rural families adjust to economic change.



# INFORMATION DIVISION



Last step in the research on ways to improve homemaking is getting the findings ready for public appearance. This is where specialists in information techniques join with research scientists, as they prepare each new "brain child" to go forth into the world with its message. The "brain children" take on all the forms in which research findings are presented--printed bulletins, educational charts, radio scripts, press

releases, fact sheets, film strips, and occasionally talking motion pictures.

A research agency such as the Bureau of Human Nutrition and Home Economics develops two kinds of findings--practical facts for homemakers to use and technical data that help to build the scientific and professional background of home economics. In any case the material that goes out must be clear, complete, and suitable for the eye or

ear of the particular audience to which it is directed.

The information people are in a way the liaison officers between the research staff and the public. When the report of a piece of research comes to them the first question they ask is--who will use these facts? Are they for all homemakers coast-to-coast? Or are they intended for research workers, or for teachers, extension people, and others in the professional home economics groups?

Suppose you should happen along when this information workshop was busy with new material on home canning or freezing. You'd find them--writers, editors, artists, layout experts--pooling their "know-how" to help scientists present the new facts in such a clear easy-to-understand way that any one of the 20,000,000 families who put up food every year can use them.

For the popular canning bulletin to be used by Mrs. J. Q. Public, they would be discussing format, paper, type--all of the

details of how best to print effectively and yet keep down cost. When a bulletin is printed and reprinted in millions of copies, these are practical points it is well to settle early.

You'd also see them developing with the scientists step-by-step sequences of close-up pictures showing exactly how to can tomatoes, peaches, corn, and so forth, in tin and in glass. They'd be lining up a set of press pictures, too, featuring a capable, attractive woman demonstrating the new techniques against a home kitchen background. They'd be figuring also how to make these same pictures into a series of slide films or use them as the "still" basis for planning a motion picture should funds become available.

Meantime the editors would be reviewing the manuscript of the research report, getting it ready for publication as a technical bulletin. This is the type of publication where scientist speaks to scientist in the

language of the laboratory. But even in such a technical report careful editing can often improve organization, catch slips between tables and text, find omissions in bibliographical references, and otherwise help to make it a better piece of scientific reporting.

While the new bulletins are on the press, you would see a writer tapping out an "advance" story to go to editors of magazines and women's pages in newspapers. Or she might be telephoning the radio broadcasters about putting the news on the air. Or you might find her working with the scientists on a digest of the research facts for the

use of home demonstration agents and teachers wishing to include the new data in their educational materials.

All this may sound like the work of a large group, but it really is just a small staff coordinated like a task force to do an effective job of carrying research results to the public. Like the jobs in the other divisions of the Bureau it calls for specialized training. College study of home economics combined with journalism or advanced work in English composition, or demonstrated proficiency in graphic presentation--one or more of these are needed to qualify for the information work.





## Some of the Bureau's Outstanding Accomplishments

★ Issued comprehensive tables of food composition, based on review of the world's scientific literature. These tables are revised from time to time in the light of newer knowledge. Latest revision gives figures on 11 nutrients including vitamins and minerals, besides protein, carbohydrates, and energy value in terms of calories. These tables are regarded as authoritative both here and abroad. Physicians and dietitians use them in calculating diets. Nutritionists and food economists use them in preparing family food budgets, in analyzing results of dietary surveys, and in preparing estimates for feeding the military services and civilian groups.

★ Analyzed the nutritive value of United States per capita food supply over a 37-year

period (1909 to 1945), bringing to light trends in national diet through war and peace, good times and depression. These facts are useful to commercial, educational, and governmental agencies, as background against which to appraise current supplies and plan future programs.

★ Estimated that one-third of the Nation was ill-fed in 1934-36 as judged by dietary standards and by analysis of 5,158 family food records from cross-section of U.S.A. rural and city families from coast to coast.

★ Translated human needs for calories, protein, minerals, and vitamins, as defined by nutrition standards, into food plans at different cost levels. These master plans giving kinds and quantities of foods needed

by persons of different age and activity, are revised frequently to incorporate advances in nutritional knowledge and to keep them in line with changes in price and national food supply. These plans are flexible enough to serve as a guide to good nutrition for any family anywhere in the United States --regardless of income level, family composition, or food habits.

★ Developed low-cost food plans to guide relief agencies in emergency feeding, thus helping to prevent serious nutritional deficiencies during times of economic depression and food shortage.

★ Made important advances in protein chemistry in foods of both plant and animal origin, pointing the way to more efficient use of these foods in diets here and abroad.

★ Pioneered in determining the vitamin A requirements of humans, thereby opening a

field of nutrition research which has yielded important results that contribute to understanding and estimating the food needs of man with greater accuracy.

★ As a result of 3 years intensive research obtained new scientific facts on home canning of meats and low-acid vegetables to put this household task on a more solid scientific basis. Adoption of the revised processing methods by home canners offers a means of reducing spoilage, with possible saving of millions of dollars worth of home-canned food now lost annually. More flavorful products and higher food value are other advantages made possible by this research completed in 1946.

★ Helped to establish scientific basis for modern methods of meat and poultry cooking at constant moderate temperature, as part of a nation-wide cooperative project. This method, applicable to all the common cuts

and kinds of meat and poultry, keeps the protein tender, lessens shrinkage, and holds in juices, thereby conserving both quality and quantity.

★ Cooperated with other Federal agencies in obtaining the first comprehensive picture of American family spending and saving habits, through the Consumer Purchases Study in 1935-36. The completed set of 47 reports, of which the Bureau prepared 22, provided detailed analysis of how money is spent for food, housing, and other items by families with different incomes and living in cities, in villages, and on farms. A smaller study was made in 1942. During the war, these reports were used extensively in planning civilian supplies of food, clothing, and other consumer goods, and for making decisions on rationing and on other important measures. These consumer purchases reports continue to be basic references for industrial, governmental, and educational purposes.

★ Made the first study of body measurements of women and children ever conducted on a nation-wide scale, as a basis for sizing clothing. Measurements yielded data on about 150,000 children and 15,000 women, and provided industry with a practical and scientific basis for overcoming waste that annually costs millions of dollars a year, due to misfits and returned goods

★ Completed a 5-year study of possibilities for greater usefulness of cotton in women's hosiery, results of which provided the trade with information on yarns, finishes, and hosiery construction. Thus the Bureau was able to release to the trade 300 designs for women's full-fashioned cotton hose when silk imports from Japan were banned in 1941.

★ Pioneered in design of women's work clothing for home, farm, or factory use, so as to promote efficiency, safety, comfort,

and health of the wearer. Research begun 18 months before Pearl Harbor, made it possible to release work clothing designs to pattern companies and ready-to-wear manufacturers early in the war. Within a few months, 100 companies were putting on the market garments following or adapting the designs. The Bureau thus started and set a standard for a new large branch of the women's clothing industry.

☆ To give all branches of the public benefit of its research findings, the Bureau has over 100 bulletins available for distribution on request. Over half of these are for homemakers. The others, more technical in nature, are for research and professional workers.

☆ The annual distribution of these bulletins runs into millions of copies and shows that the American public is increasingly aware of the need to apply research findings to problems of everyday living.

## A Bit of the Bureau's History ....

Authority for the Bureau's work stems from an Act of Congress in 1862 which established the U. S. Department of Agriculture and provided for annual appropriation acts to furnish funds for the Department's functions.

In 1894, the Bureau's work began when Congress appropriated \$10,000 "to enable the Secretary of Agriculture to investigate and report upon the nutritive value of the various articles and commodities used for human food, with special suggestion of full, wholesome, and edible rations, less wasteful and more economical than those in common use..."

Planning of a program was undertaken by Dr. W. O. Atwater, director of the Department's experiment station work. His field of research was human nutrition, and so clear and comprehensive were the goals that

he set for the Government's nutrition investigations that even today the Bureau is steering by them in its nutrition program.

From this nucleus of nutrition investigations the Office of Home Economics was organized in 1915, in response to demand of extension workers for more scientific facts not only in nutrition but in other phases of home economics. Passage of the Smith-Lever Act by Congress in 1914 had opened the way for a nation-wide program of home demonstration work, but at every turn the agents were confronted by questions they couldn't answer.

During World War I the pressure increased for facts, more facts, on a myriad of home problems. Also the Nation became aware for the first time of the practical value of scientific knowledge on food and nutrition in a world crisis. Following that war--in 1923--the home economics research unit in the Department of Agriculture was given bureau status. It thus was on an administrative level with units dealing with research

in animal and plant production and responsible directly to the Secretary of Agriculture.

In 1943, during the stress of another world conflict in which nutrition and economical use of food, clothing, and other supplies became one of the paramount issues, another change was made in the organization and name of the Bureau. The protein chemistry research directly related to nutrition carried on in another branch of the Department was integrated with the nutrition work under way in the home economics laboratories and Bureau of Human Nutrition and Home Economics given as the name for the whole. This followed shortly after the establishment of the Agricultural Research Administration which brings together within the Department a number of agencies whose chief job is pushing back frontiers of knowledge in the production and use of food, fiber, and other products of the land. The Bureau of Human Nutrition and Home Economics is an integral part of that great research group.\*



# Administrative Responsibility

As this brief description of the Bureau of Human Nutrition and Home Economics at work shows, the research and dissemination of the findings is organized into five divisions. At the helm, advising, coordinating, directing, somewhat like a captain steering the course of his ship, is the Office of the Chief. Working closely with the Chief's office and with each division is the unit handling business and personnel matters. The persons filling the key positions in the Bureau at present are:

Chief of Bureau, Dr. Hazel K. Stiebeling  
Assistant Chief, Miss Ruth O'Brien  
Assistant Chief, Dr. Callie M. Coons  
Administrative Officer, Miss Cecelia Huneke  
Information Head, Miss Ruth Van Deman

## Heads, Research Divisions:

Family Economics, Dr. Margaret G. Reid  
Housing and Household Equipment, Miss Lenore E. Sater  
Textiles and Clothing, Mrs. Bess V. Morrison  
Food and Nutrition, Dr. Esther L. Batchelder

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